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Received

18 JUN 2003

Impetus

Datum/Date

16.06.03

Zelchen/Ref./Réf. TI-33657 EP	Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°. 03290002.9-1243-
Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire Texas Instruments Incorporated, et al	

COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

☐ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

The following specifications given by the applicant have been approved by the Search Division:

☒ abstract

☒ title

☐ The abstract was modified by the Search Division and the definitive text is attached to this communication.

The following figure will be published together with the abstract:

1

REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	WO 93 20538 A (ZUK EDWARD ANDREW ;TELSTRA CORP LTD (AU)) 14 October 1993 (1993-10-14)	1,5,9	G06F1/00 G06F7/58 H04L9/32
Y	* page 5, line 9 - line 10 * * page 6, paragraph 2 * * page 8, paragraph 3 *	2-4,6-8,10	
Y	US 6 195 433 B1 (VANSTONE SCOTT A ET AL) 27 February 2001 (2001-02-27) * column 3, line 51 - column 4, line 2; claim 1 * -& US 6 195 433 B1 (CERTIFICATE OF CORRECTION) 19 February 2002 (2002-02-19) * column 3, line 67 *	2,3,6,7,10	
Y	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 06, 22 September 2000 (2000-09-22) & JP 2000 067027 A (TOSHIBA LSI SYSTEM SUPPORT KK;TOSHIBA CORP), 3 March 2000 (2000-03-03) * abstract *	4,8	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	EP 0 534 420 A (IBM) 31 March 1993 (1993-03-31) * column 14, line 36 - line 43 *	2,3,6,7,10	G06F H03K H04L
A	WO 01 48974 A (DREXLER HERMANN ;VATER HARALD (DE); GIESECKE & DEVRIENT GMBH (DE)) 5 July 2001 (2001-07-05) * page 5, line 11 - line 17 *	3,7	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 6 June 2003	Examiner Verhoof, P
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	



European Patent
Office

**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
EP 03 29 0002

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-3, 5-7, 9, 10

random key generation with detection of undesirable random numbers

2. Claims: 4, 8

random key generation with detection of writing errors



CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☒ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 29 0002

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

06-06-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9320538	A	14-10-1993	AT 207642 T	15-11-2001
			AU 671986 B2	19-09-1996
			AU 3818093 A	08-11-1993
			WO 9320538 A1	14-10-1993
			CA 2133200 A1	14-10-1993
			DE 69331006 D1	29-11-2001
			EP 0634038 A1	18-01-1995
			JP 7505270 T	08-06-1995
			SG 46692 A1	20-02-1998
			US 5745571 A	28-04-1998
US 6195433	B1	27-02-2001	AU 3695299 A	29-11-1999
			CA 2330749 A1	18-11-1999
			WO 9959286 A1	18-11-1999
			EP 1076952 A1	21-02-2001
			JP 2002515613 T	28-05-2002
JP 2000067027	A	03-03-2000	NONE	
EP 0534420	A	31-03-1993	US 5201000 A	06-04-1993
			CA 2075254 A1	28-03-1993
			EP 0534420 A2	31-03-1993
			JP 2690004 B2	10-12-1997
			JP 5224604 A	03-09-1993
WO 0148974	A	05-07-2001	DE 19963408 A1	30-08-2001
			AU 2675401 A	09-07-2001
			CN 1415147 T	30-04-2003
			WO 0148974 A1	05-07-2001
			EP 1262037 A1	04-12-2002
			US 2003061498 A1	27-03-2003

EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 2000067027
PUBLICATION DATE : 03-03-00

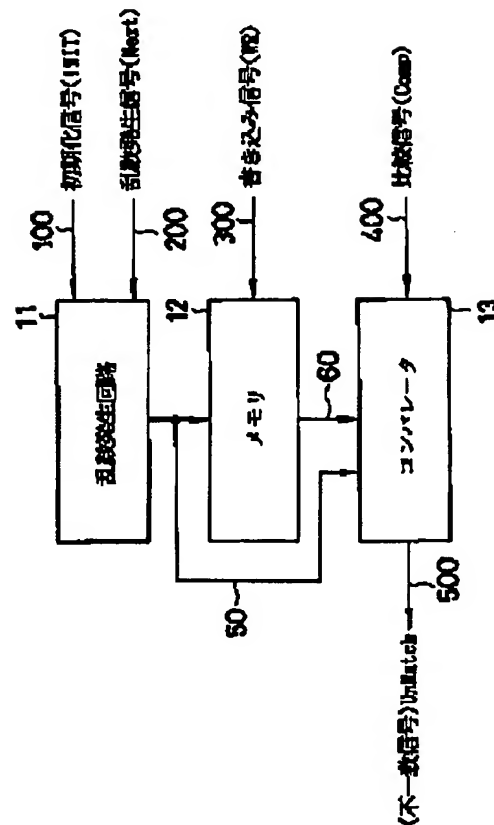
APPLICATION DATE : 20-08-98
APPLICATION NUMBER : 10234289

APPLICANT : TOSHIBA CORP;

INVENTOR : HOSHINO TOMOHIRO;

INT.CL. : G06F 15/78 G06F 1/28 G06F 1/30
G06F 1/24

TITLE : LOW VOLTAGE DETECTING CIRCUIT
AND MICROCOMPUTER



ABSTRACT : PROBLEM TO BE SOLVED: To stabilize the operation of a microcomputer by preventing the microcomputer from being reset until the normal operating border voltage of the microcomputer.

SOLUTION: A random number generated in a prescribed cycle from a random number generating circuit 11 is written in a memory 12. The random number written in the memory 12 is read, and compared with the original number generated from the random generation circuit 11 by a comparator 13. The random number generating circuit 11 and the comparator 13 have a low threshold value V_g which is the same as that of a microcomputer which is not shown in a figure, and the memory 12 has a little higher threshold value V_m than the threshold value V_g . Therefore, when an operating voltage V_{DD} of the microcomputer and a low voltage detecting circuit is decreased to a voltage between the threshold values V_m and V_g , the malfunction of the memory 12 is operated, and the comparator 13 outputs an unmatch signal 500 for resetting the microcomputer. The threshold value V_m is set a little higher than the threshold value V_g so that the microcomputer can be reset until the operating voltage V_{DD} is decreased to a voltage extremely close to the operable border voltage of the microcomputer.

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